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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/926,498  | 11/13/2001  | Arnaud Gueguen       | 215352US2PCT        | 6655             |
| 22850   | 7590        | 08/19/2005           | EXAMINER            |                  |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.<br>1940 DUKE STREET<br>ALEXANDRIA, VA 22314 |             |                      | CHEN, TE Y          |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2161                |                  |

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/926,498

**Applicant(s)**

GUEGUEN ET AL.

**Examiner**

Susan Y. Chen

**Art Unit**

2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 10 and 12-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10 and 12-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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***Response to Amendment***

This office action is in response to the amendment filed on 05/20/2005

Claims 10, 12-19 are pending for examination, claims 10, 12-13, 15-16 have been amended; claim 11 has been canceled.

***Response to Arguments***

In light of the prior art as disclosed following, the examiner regrets to withdraw the allowable subject matters as indicated on record.

Applicant's arguments filed on 05/20/2005 have been fully considered but they are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 10, 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laumen et al. (U.S. Patent No. 6,396,423) in view of Wang (U.S. Patent No. 6,014,411).

As to claim 10, Laumen et al. (hereinafter referred as Laumen) discloses a digital transmission method of an error correction coding [Abstract; col. 1, lines 21-33], comprising:

a) observing transmission conditions continuously to detect at least one dynamic parameter of the current transmission conditions [e.g., the use of channel coding method based on Cyclic redundancy check (CRC) or Reed-Soloman techniques during digital data transmission to observing transmission error conditions, col. 1, lines 60 – col. 2, line 44];

b) selecting dynamically, as a function of the at least one dynamic parameter, a distribution of elementary coding step redundancies from a plurality of distributions of elementary coding step redundancies for which a global efficiency is equal to a predetermined target efficiency, for which a global efficiency of a coding scheme resulting from a serial concatenation of an elementary coding step, such that the predetermined target efficiency being determined by a product of efficiencies of at least two elementary coding steps modified by corresponding puncturing steps [e.g., the adjustable turbo coding procedure at col. 2, lines 16 – 37; the functional subsequent coding steps at col. 4, lines 8-40; the correction unit (13, Fig. 2) of the inner (Viterbi) decoder, col. 5, lines 3 – 65; the steps:1015, 1016 of Fig. 3 and associated texts; Note: all of the

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steps and means are covered by the default Gaussian distribution function of a Turbo coding/decoding].

*reword* ( Laumen did not expressly disclose the details to perform a ~~Viterbi Turbo~~ encoding/decoding processing as claimed. *in d 10, last two paragraphs*

However, Wang discloses the details as claimed by applicant, comprising:

performing a coding procedure including the at least two elementary coding steps concatenated in series with corresponding puncturing steps, and an interleaving step between said at least two elementary coding steps, each of the at least two elementary coding steps adding at least one redundancy bit to data [e.g., the first and second encoders interleaving and puncturing data flushing processing of Fig. 5, col. 15, lines 55 – col. 16, line 58] including a sequence of at least one bit by applying the selected distribution of elementary coding step redundancies to generate a coded data including the data and the at least one redundancy bit for a transmission of the coded data over a channel [e.g., the first and second encoders interleaving and puncturing data flushing processing of Fig. 5, col. 15, lines 55 – col. 16, line 58]; and

performing an iterative decoding procedure including at least two elementary decoding steps, de-interleaving and de-puncturing steps, and puncturing and interleaving steps corresponding to the at least two elementary decoding steps to obtain, from the coded data, an estimation of the data [e.g., the

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first and second decoders de-interleaving and de-puncturing processing of Fig. 7, col. 17, lines 45 – col. 18, line 58].

Laumen and Wang are both in the same endeavor to minimize the errors/noise for digital transmission via turbo encoding and decoding. Therefore, it would have been obvious for an ordinary skilled person in the art at the time the invention was made to be motivated to apply the well known turbo encoding and decoding processing details as taught by Wang in Laumen's system for the purpose to given more clearly description of the intended performance steps associated with the turbo encoding and decoding of his invention.

As to claims 12 and 14, except the limitations recited in claim 10 above, the combined system of Laumen and Wang further discloses that performing a coding procedure repeatedly modifies the puncturing and interleaving steps and performing a decoding procedure modifies the de-interleaving and de-puncturing steps that corresponding to the at least two elementary decoding steps, as a function of the selected distribution of elementary coding step redundancies [e.g., Laumen: e.g., the adjustment processing performed at col. 4, lines 8-57].

As to claim 13, except the limitations recited in claim 10 above, the combined system of Laumen and Wang further discloses that the performing a coding procedure eliminates one or more elementary coding steps and the corresponding puncturing and interleaving steps and the performing a decoding

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procedure eliminates one or more said elementary decoding steps, the de-interleaving and de-puncturing steps, and the puncturing and interleaving steps corresponding to the at least two elementary decoding steps, as a function of the selected distribution of elementary coding step redundancies [e.g., Laumen: col. 4, lines 24-57].

As to claims 15 and 16, except the limitations recited in claim 10 above, the combined system of Laumen and Wang further discloses that the elementary coding are performed using convolutional and block codes [e.g., Laumen: col. 4, lines 24-28].

As to claim 17, except the limitations recited in claim 10 above, Laumen further discloses the at least one dynamic parameter is a signal/noise ratio [e.g., col., 1, lines 29-31].

As to claims 18-19, except the limitations recited in claim 10 above, Laumen further discloses the observing transmission conditions and selecting a distribution of elementary coding are executed by a transmitter [e.g., the contemporary UMTS system, col. 2, lines 16-18] and a receiver [e.g., the Viterbi decoder, col. 5, lines 15- 65].

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Moon, Hi-Chan (U.S. Patent No. 6,888,804) which discloses a digital data transmission system to insert side information for communication.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Y Chen whose telephone number is 571-272-4016. The examiner can normally be reached on Monday - Friday from 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 571-272-4023. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Susan Y Chen  
Examiner  
Art Unit 2161

August 12, 2005



UYEN LE  
PRIMARY EXAMINER